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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WANG, CLAIRE X

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

05/13/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,409	Applicant(s) RAUSCHER ET AL.	
	Examiner CLAIRE WANG	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response Applicant's request for a Pre-appeal conference dated March 9th, 2010, a decision has been made to vacate the previous Non-final office action due to inconsistencies with referenced prior arts.

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2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 1st, 2009 has been entered.

3. Applicant's amendment has necessitated new grounds of rejection. Thus, new grounds of rejection are presented in this Office Action.

Response to Arguments

4. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground of rejection.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claims recite a series of steps or acts to be performed, the claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example, claim 1 states different steps of detecting, forming and doing object allocation, however, all the steps could be performed manually through mathematical algorithms, furthermore nothing within the claimed language that ties the performance of these steps to a machine. Thus, claim 1 is not tied to a statutory category of invention. In addition, claim 1 does not physically transform the data into a different state, therefore, also do not meet the requirements of transformation.

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baudat (5,678,677) in view of Fujii et al. (4,277,774 hereinafter "Fujii").

As to claim 1, Baudat teaches a method for checking value documents comprising the steps forming a measuring vector from measuring values corresponding to different frequencies and/or frequency domains of the reflected intensity (in each area of the banknote, there may be measurements of different features such as reflectance intensity of lights, these measurements are then delivered to the preliminary system where for each scanning point, a k-dimensional local feature vector is formed; Col. 4, lines 4-16); and doing an object allocation of the measuring vector to one of a plurality of given reference vectors corresponding to different authenticity features by allocating at least one object allocation area to each reference vector and checking which object allocation area the measuring vector located in (each component of each of the k-dimensional vectors can then be compared with a stored range and then classified; Col. 4, lines 43-51). However, Baudat does not explicitly teach a method for checking a value document having an authenticity feature in the form of at least one luminescent substance, comprising the steps of irradiating the value document with light, thereby

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causing the value document including said luminescent substance to emanate luminescence radiation

Fujii teaches a bill discriminating apparatus (Title) wherein an ultraviolet ray-emitting member for irradiating a bill to be discriminated, a photo-electric converter element for receiving light rays emitted from a light-emitting substance in a printed zone of a bill (Col. 1, lines 42-50). Thus, Fujii reads on the claimed a method for checking a value document having an authenticity feature in the form of at least one luminescent substance, comprising the steps of irradiating the value document with light, thereby causing the value document including said luminescent substance to emanate luminescence radiation. Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to combine the bill authentication method of Baudat with the bill discriminating capabilities using printed light-emitting substance in order to prevent counterfeiting by producing a machine copy (Fujii Col. 1, lines 34-41).

As to claim 15, it is the apparatus claim of claim 1. Please see above for detail analysis.

As to claim 2, Baudat teaches a step for checking whether the amount of the measuring vector is greater than a given reference value (the greatest magnitude component of the surface feature vector is compared with a limiting parameter; Col. 7, lines 26-31).

As to claim 3, Baudat teaches wherein the step of checking whether the amount of the measuring vector is greater than a given reference value is carried out before the step of allocating the measuring vector to one of a plurality of given reference vectors (the comparison step is the first step and it is done before any values are assigned to the target vector; Col. 7, lines 48-49).

As to claim 4, Baudat teaches wherein the measuring vector and the reference vectors are normalized (transformation both normalize and compresses the data; Col. 5, lines 24-26).

As to claim 5, Baudat teaches wherein the object allocation of the measuring vector to one of the reference vectors is done by comparing the measuring vector with a plurality of reference vectors and/or with at least one quantity which depends on at least two reference vectors in (each component of each of the k-dimensional vectors can then be compared with a stored range and then classified; Col. 4, lines 43-51).

As to claim 6, Baudat teaches wherein the object allocation of the measuring vector to one of the reference vectors is done by determining a smallest difference, as exemplified by the smallest distance from the measuring vector to the reference vectors (in each unit there is determined a target vector that, amongst all the target vectors of the target class, has the least value of a distance from the surface feature vector, wherein the distance is advantageously the Euclidean distance between the target vector and the surface feature vector; Col. 6, lines 34-39).

As to claim 7, Baudat teaches wherein a quantity which depends on at least two reference vectors is formed as a separation plane between the two reference vectors, as exemplified by an dimensional hyperplane between the two n-dimensional reference vectors, the separation plane separating the object allocation areas of the two reference vectors from each other (Fig. 5).

As to claim 8, Baudat teaches wherein a quantity which depends on at least two reference vectors is formed as a separator plane, characterized in that the object allocation of the measuring vector to one of the reference vector is determined by determining a position of the measuring vector relative to the separation plane (Col. 8, lines 5-20).

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As to claim 9, Baudat teaches wherein the luminescence radiation is measured with time resolution on a value document to be checked, such that the comparison of measuring vector and reference vectors can be done time-dependently (real-time system; Col. 2, line 47).

As to claim 10, Baudat teaches wherein the measurement of the luminescence radiation is done only on one or more predetermined partial areas of a surface of the value document which can be predetermined denomination-specifically (scanning a bank lit by different lights, wherein different individual areas are scanned in; Col. 4, lines 4-19).

As to claim 11, Baudat teaches wherein the measuring vector comprises measuring values of an invisible spectral range (infra-red radiation; Col. 4, line 11).

As to claim 17, Baudat teaches wherein the invisible spectral range is an infrared spectral range (infra-red radiation; Col. 4, line 11).

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8. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baudat and Fujii as applied to claim 1 above, and further in view of Yakhini et al. (US 7,330,606 B2 hereinafter "Yakhini").

As to claim 12, the combination of Baudat and Fujii as a whole teaches the invention of claim 1 above, but fails to teach the limitations of claim 12. Yakhini teaches a method for extracting data from a surface (Title), wherein the data is extracted and the magnitude of the background signal is determined. Thus, Yakhini reads on the claimed wherein evaluation of the measuring values takes account of a background signal which does not come from the luminescence radiation. Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to consider Yakhini as a modification to the combined teachings of the Baudat and Fujii in order to extract the features of interest from the background (Yakhini Col. 2, lines 63-64).

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As to claim 13, Yakhini teaches wherein, for forming the measuring vector, an amount depending on the magnitude of the background signal is subtracted from the measuring values (compute, for each signal, background subtracted magnitudes for each feature; Col. 3, lines 1-2).

As to claim 14, Yakhini teaches wherein the amount is dependent on the magnitude of a minimum and/or maximum of the measuring values and/or a ratio of two measuring values (determine the ratio of background-subtracted and normalized signals for each feature; Col. 3, lines 7-10).

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9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baudat and Fujii as applied to claim 7 above, further in view of Kurosawa et al. (5,542,518 hereinafter "Kurosawa")

As to claim 16, in view of the combination of Baudat and Fujii as a whole, Baudat teaches a separation plane (Fig. 5), but fails to teach the limitations of claim 16. Kurosawa teaches a method of identifying the denominations of pieces of paper (Title), wherein hyperplane is used to identify the denominations (Col. 2, lines 44-49). Thus, Kurosawa reads on the claimed wherein the separation plane (T) is an $(n-1)$ dimensional hyper plane. Therefore it would have been obvious for one ordinarily skilled in the art at the time the invention was made to consider Kurosawa as a modification to the combination of Baudat in view of Fujii as a whole in order to better identify the denomination (Kurosawa Col. 2, lines 44-49).

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10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baudat and Fujii as applied to claim 11 above and further in view of Ahlers et al. (US 7,092,583 B2 hereinafter "Ahlers").

As to claim 18, the combination of Baudat and Fujii as a whole fails to teach the limitations of claim 18. However, Ahlers teaches a method for detecting the authenticity of secured documents (Title), wherein a laser is used to project light which may be infrared, visible or ultraviolet wavelength range. Thus, Ahlers reads on the claimed wherein the invisible spectral range is an ultraviolet spectral range. Therefore it would have been obvious for one ordinarily skilled in the art at the time the invention was made to consider replacing the projected light of the combined teachings of Baudat in view of Fujii with the laser with multiple selections of wavelengths of Ahlers as a simple alternative in order to have more selection of light projections.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLAIRE WANG whose telephone number is (571)270-1051. The examiner can normally be reached on M-F 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on 571-272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Claire Wang/
Examiner, Art Unit 2624
05/07/2010

/Vu Le/
Supervisory Patent Examiner, Art Unit 2624